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► To cite this version:

Isabelle Huault, H  l  ne Rainelli-Le Montagner. The connexionnist nature of modern financial markets.
Challenges and possible outcomes. Egos colloquium, Jul 2010, Portugal. halshs-00506961

HAL Id: halshs-00506961

<https://shs.hal.science/halshs-00506961>

Submitted on 29 Jul 2010

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The connexionist nature of modern financial markets

Challenges and possible outcomes

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Abstract

The recent financial crisis has triggered radical criticism against financial markets. In this paper, we propose to analyse this criticism in the perspective drawn by Boltanski and Thevenot (1991/2006) around the notion of justification. We see the main debate as opposing the critics and the defenders of what can be identified as a Market order (Boltanski and Thevenot, 1991/2006). While the former regret the consequences of deregulation in financial markets, the latter insist on the preservation of regulatory options favouring market activity as much as possible.

This debate however relies on the hypothesis that financial markets in general fit the ideal-type of the Walrasian market model. While this hypothesis might make sense as regards the description of stock markets (this refers to the so called market efficiency issue), it appears unrealistic when applied to the majority of modern financial markets. At least 80% of those are OTC markets where bilateral contracts are exchanged between counterparties in the absence of any centralized structure.

Our thesis is that to be useful, a critical perspective on financial markets should take full account of the nature of OTC markets, which guarantees neither the transparency of prices nor the efficiency of competition mechanisms. We propose to characterize this nature using Boltanski and Chiapello's concept (1999/2008) of the Connexionist World. We then emphasize the difficulty of the connexionist grammar of worth to develop principles of justice in OTC markets, which are characterized by their despatialization and the infinity of potential members. We suggest potential tracks to struggle more efficiently against the drifts of the connexionist logic as they arise on financial markets and their spillover effects on societies.

The contribution of the paper is thus to provide a more precisely targeted critique of modern financial markets.

Introduction

The financial crisis that began in the summer of 2007, and was accelerated in September 2008 by the failure of Lehman Brothers, has brought fierce and multifaceted criticism down on the financial markets. At the risk of being too schematic, we recognise that the debate is essentially divided into two distinct camps. The first condemns the ability of the markets to circulate vast capital sums with no geographical limits and thus their ability to create damaging competition, pitting everyone against everyone else (Arnoldi, 2004; Bryan and Rafferty, 2006; LiPuma and Lee, 2004, 2005; Maurer, 2002; Pryke and Allen, 2000; Tickell, 1998) to the detriment of industrial investment and economic stability. The second is opposed to any regulation that would limit freedom of action. This is seen as detrimental because it reduces market activity, prevents the establishment of a fair price in financial deals, and raises the cost of financing businesses and households. This analysis, which is favoured by the promoters of financial innovations, is obviously not free from self-interest. However, what interests us primarily is that it is based on a Walrasian conception of markets (where purely competitive markets produce perfect price transparency), which poorly fits the reality of modern financial markets (which are mostly OTC markets involving non transparent bilateral transactions). The aim of this article is to take full account of this mismatch, lift the veil on the characteristic nature of current financial markets, and think afresh about the challenges posed by the financial system as it stands at present. Our argument is based on the idea that modern financial markets, in their over-the-counter (OTC) shape, derive from a new capitalist logic: the connexionist logic (Boltanski and Chiapello, 1999/2005). Identifying the values system and characteristics of this logic reveals the distance between the rhetoric of justification used by supporters of the markets and the true mechanisms at stake. It provides

paths for solutions to the dysfunctional processes observed on OTC markets.

The promotion of the activity of financial markets refers us back to a theoretical framework known as the *efficient-market hypothesis* (EMH) (Fama 1970, 1991). EMH posits that the ability to buy and sell without hindrance allows information on fundamentals held by one party or another to integrate the prices of financial securities quickly and efficiently. Free competition between security issuers and investors thus allows the price to reflect the “true” and “fair” value of securities (Carruthers and Stinchcombe, 1999) at any given moment. This vision of how financial markets function takes as its ideal the Walrasian model of the perfect market, where the bids and offers of individual agents, each with full access to the available information, are directed to an auctioneer who works out the price and then announces it to traders. It provides theoretical foundations for regulatory options favouring market activity, or hindering it as little as possible.

Without engaging in the debate about the ability of the efficient-market theory to describe the proper functioning of stock markets, we note that most modern financial markets obviously do not fit the Walrasian description. From statistics about world financial markets produced by the Bank for International Settlements (BIS) we can state that in December 2008 these were made up in notional volumeⁱ of 80% of OTC derivatives markets, stock markets properly speaking comprising only 5% of international financial markets. In the absence of detailed statistics relating to the nature of the debt market (whether standardized or OTC) it is not possible, with the figures supplied by the BIS, to quantify the exact percentage of the international financial markets that operate OTC, but it appears sensible to estimate that the majority of financial transactions occur on such markets. Comprising bilateral transactions between two parties, and determined by the placing of private contracts, these “markets” allow neither the deal prices, nor the volumes exchanged to be placed in the public domain.

We are thus faced with a strange situation, where in order to justify largely unrestrictive regulations, the supporters of financial markets and financial innovations seem to project the idealised image of the Walrasian market onto the OTC markets, which obviously do not fit the description. The argument most often made to justify this apparent contradiction is that exchange through a private market is a necessary step for financial innovations that, once widely accepted and used, will be called upon to join more transparent and competitive markets. In any case, regulation should not inhibit business activity because one expected development is progressive homogenization of traded products, resulting in greater liquidity and eventually more efficient competition among those who supply and demand these products.

Adopting a historical perspective on developments in modern finance however, offers very little in favour of the actuality of the process that might lead the OTC markets towards the model of quasi-Walrasian markets. Since the establishment of options and futures markets in their modern form in the 1970s in the EU and the 1980s in Europe, options and futures traded on standardized markets represent a mere 3% of the total of the derivatives market. All the financial innovations that arose on OTC markets have stayed there. The market for interest rate swaps for example, which constitutes 54% of the entire market in derivative products, is typically an OTC market. The recent crisis experienced by credit derivatives has induced regulators to try to set up clearing houses and to bring their way of functioning closer to that of the organized markets. The apparent slowness with which this change is being accomplished, and the resistance of the parties involved, shows that the process, still very tentative, is neither easy nor natural.

These observations lead us to reject the argument that the OTC model will be only a passing phenomenon on modern financial markets, and to form the hypothesis that OTC markets are different in nature from standardized markets. If participants in financial markets have shown

a preference for this kind of market for more than two decades, it is not by chance nor is it likely to be of brief duration. It is more likely that this kind of market fulfils a particular function that needs to be identified and defined. Some elucidation therefore seems necessary to distinguish and re-evaluate the mechanisms that regulate these new-style markets and that might prove to be dysfunctional. This will be a starting point for a renewed and more in-depth criticism of the way the current financial system functions.

To contribute to this renewed criticism, we propose to use the theoretical frameworks provided by Boltanski and Thévenot (1991/2006) and Boltanski and Chiapello (1999/2005). We shall try to establish that modern financial markets of the OTC model, far from belonging to the *market order* described by Boltanski and Thévenot, seem to follow a new capitalist logic – the connexionist logic (Boltanski and Chiapello, 1999/2005). In the first part of this paper, we endeavour to describe OTC markets from this point of view. This enables us to consider the changes in the critique required once the connexionist nature of OTC markets has been identified. The challenges they present in the financial sphere, to the economy as a whole, and to society at large are reassessed in the second part of the paper.

1 From the Walrasian ideal to modern financial markets

Boltanski and Thévenot (1991/2006) identify and describe six worlds corresponding to six grammars of worth within which individuals move around, calling on the scales of one world or another when they need to justify themselves in cases of discord, which are inevitable once individuals are obliged to organise themselves within the framework of collective action. For Boltanski and Thévenot, each “world” constitutes a specific justification regime, characterised by a higher common principle that is called upon whenever there is conflict within one world or between worlds. The *world of inspiration*, whose higher common principle is the

flourishing of inspiration and illumination, is opposed to the *domestic world*, which is governed by the principle of place in the ordering of generations, tradition and hierarchy. The *world of fame* is subjected to the law of reputation; the dominant value in the *civic world* is the pre-eminence of the collective; and in the *industrial world*, the highest principle is efficiency. The *market world's* higher common principle is competition, where rivalry and competitiveness are seen as positive values.

Among these six worlds we are most interested in the market world, which seems to offer a renewed characterisation of the Walrasian ideal of efficient markets.

1.1 Stock markets, OTC markets and the “market order”

The market world described by Boltanski and Thévenot (1991/2006: 252) is characterised by three main traits. The first concerns the nature of relationships between individuals. These are a-temporal, with no past or future and are focused on “objectivised” objects, in the sense that neither their definition nor their value depends on the persons involved in the transaction. The second characteristic trait concerns the definition of agents, summed up as a client, supplier, buyer, seller or competitor, roles that individuals can adopt in turn (Aspers, 2009). Individuals in this world are characterized by their detachment from others: they are free and available for all kinds of transactions. The third trait specific to the market world allows the precise identification of its scale, its grammar of worth and its highest common principle, to be found in the predominance of free competition. Although the market world is peopled by individuals who are selfish by nature, since through their transactions they pursue the satisfaction of their desires, these inhabitants are bound together by a collective value, a scale of worth that is measured by the degree of free competition operating in this world. Disputes are resolved by establishing the commercial scale of the worth of goods, in other words by price. With Boltanski and Thévenot (1991/2006), we note that the seeming homogeneity in goods

exchanged in the market world, and the recognition of a price scale, means each transaction can be compared to other transactions and equivalences can be established. Although the price of a given transaction is the result of negotiations between individuals, there is such a thing as a “general price”, a point of reference, something like a true value, a fair price. The existence of this fair price depends upon the capacity of numerous agents to buy and sell with no hindrance.

These three characteristics of the market world seem to us a fairly precise description of the Walrasian ideal financial market. They also indicate the distance that separates OTC markets from this ideal. Namely, up to a certain point the world’s biggest stock exchanges appear to be regulated by the basic principles of the market world. The single common good recognized by individuals who meet there, is the preservation of the conditions for competition between buyers and sellers of stocks, with, as a corollary, the promotion of the activity of such exchanges and transparency, which determine the kind of regulation observed on these markets.

In OTC markets however the situation seems to be very different. First and foremost, the question of time scale in derivatives markets is different because contracts can commit parties over several months or years, which implies legal and financial risks. Individuals are not immediately detached from OTC transactions once they have been concluded. Additionally, the objective and homogeneous definition of goods is not as finalised on OTC derivatives markets as it is on stock exchanges. One normally distinguishes relatively standard products, which are sold at competitive prices, from the sort of bespoke products that justify the resort to an OTC market, where sellers can offer their clients products that are adapted to their needs. In transactions concerning bespoke products, the specification of the product depends, by definition, on the buyer’s expectations and the seller’s capacity to respond to them.

The question of the interchangeability of agents is also posed in different ways on OTC markets and on stock markets. The BIS statistics show that 39% of all the derivatives market can be attributed to financial institutions committed to revealing the volume and value of their transactions to the central bank in their home country. Fifty per cent of the markets concern “other financial institutions” and non-financial agents make up only 11%. Even if the financial institutions concerned alternate playing the roles of buyer and seller, the number of agents on the OTC markets is lower and we can speculate that not all agents are equal. A study carried out on the market for credit derivatives (Huault and Rainelli 2009) showed that 86% of transactions was carried out by the ten biggest international investment banks in 2007. According to the European Central Bank report of April 2009, the situation has worsened with the financial crisis: the disappearance of major players in the market (Lehman Brothers, Merrill Lynch, Bear Sterns) and certain products (monolines, hedge funds) has once more reinforced a concentration that financial authorities judge worrying.

Finally, the chief characteristic of OTC markets is that they function opaquely. Comparing the prices of different sellers in these markets is tricky. It is difficult to establish the equivalence of a given transaction because of the heterogeneous nature of the OTC contracts, and the absence of any publicity about the volume and price of comparable transactions. Transparency – ought to allow optimal allocation of resources on Walrasian type markets – seems a distant prospect for OTC markets whose opaqueness, considered a major stumbling block in mainstream financial theory, remains high.

But if OTC markets do not fit the market order described by Boltanski and Thévenot (1999/2006), how can we describe the sphere to which they belong? How can we understand the values that regulate them, the highest common principle to which agents refer to settle the litigation that sets them against each other? What principles do they use as a basis to justify market structure when attacked from outside, for example from actors from other Worlds (e.g.

the civic world in the case of regulators)? In this paper we attempt to show that OTC markets are governed by the sort of connexionist logic described by Boltanski and Chiapello (1999/2005).

1.2 OTC markets as connexionist markets

In their book, Boltanski and Chiapello (1999/2005) describe a reconfiguration of capitalism that turns on the notion of networks. While the observation of reticulation phenomena in economic exchanges is not in itself new (White, 1992), the authors show the extension of the connexionist logic in contemporary capitalism, as characterized by multiple meetings and temporary connections that can be set aside and then reactivated at will, over vast geographical distances and between extremely diverse groups. They demonstrate that the development of this logic is not just a factual evolution in methods of economic exchange but is accompanied by the constitution of a veritable “world”. Within this “world”, a value system of norms of judgement and principles of equivalence is generated, allowing the definition of internal conditions as “worthy” and “unworthy”. More specifically, the notion of *project* - serves as the real pivot of this “world”, generating a value scale that organizes the relationships between the individuals and things taken up in the connexionist logic.

Thanks to the multiplication of active connections that it creates, the project creates a space for production and accumulation in a mainly liquid world (Baumann, 2005) and generates value, justifying the demand to extend the network. For the reticular world, the project constitutes the source of a value system that Boltanski and Chiapello name “the projective city” and which is driven by a higher principle, the development of a connections network.

At the heart of this value system is activity, the principle of equivalence by which the dimensions of people and things are measured. Activity in this context does not have the meaning it has in the industrial world, where it is confused with work, or the market world,

where it signifies the number of transactions made. Instead it means the capacity to generate projects or to integrate projects generated by others. For those living in this projective city environment, it is important never to run short of projects, to know how to pass easily from one project to another and to multiply occasions for making projects. Thus connexionist beings, the “worthy person” in the projective city, are both physically and intellectually available, reactive and mobile. Flexible and multi-tasking, they know how to take risks. They can handle ambivalence and are always ready to exploit any opportunities that come their way. They are innovators whose creativity springs “more from recombination” (Stark, 1996) rather than from radical innovation. Their role is to promote collective innovation, to the extent that they would feel awkward about claiming copyright on “their” ideas. On the other hand, the “unworthy person” in this city is someone who has difficulty participating in a project and then getting out of it, who does not communicate, who does not seem capable of compromise and whose ideas appear rigid—someone immobile and inflexible.

In a world where the main activity is establishing connections, connexionist beings form particular relationships with the people they work with. They are not usually hierarchical bosses or planners, but “facilitators”, who breathe life and favour self-discipline and innovation. They do not take rare goods for their own profit but redistribute them, especially information. Their role is to favour the mobility of the individuals they work with. Their status as a worthy person requires forms of investment that will lead them to forego stability and prefer autonomy to security.

1.2.1 The role of innovation on OTC financial markets

In the same way that the general project is the means by which the connexionist world stabilises forms and generates a system of values, financial innovation, which drives the growth of modern financial markets, crystallizes their particular connexionist logic. While the

financial innovations of the 1970s (options, futures, index derivatives) were created on organised markets (see MacKenzie and Millo, 2003; Millo and MacKenzie, 2009), the great majority of new derivatives invented since the 1980s occurred in OTC markets. There, the main promoters of innovation have been the world's big banks, faced with a major evolution of financial markets in developed countries moving away from the financial model of debt to get closer to a model in which the economy is financed by the markets. When faced with the erosion of their margins in traditional credit activities, banks spotted new sources of income in financial innovation and new product offerings. They also saw the opportunity to maintain their central position in an environment that was being radically transformed. This is how, in developed countries, we ended up with a financial system of markets with new intermediaries, where the banks play a dominant role in the capital markets through OTC markets, rather than a system of direct financing of the economy by the financial markets, which had been the initial aim of the reforms of the 1980s. Temporary zones of accumulation, which create new sources of value for these agents, are made up of complex financial innovations that generate different types of ambiguity. The most interesting of these for those promoting new products is the ambiguity surrounding the principles of valuation. In fact, the uncertainty surrounding the pertinent measurement of value brings different models of calculation into competition and potentially generates margins for the inventors of new products (Beunza and Stark, 2005; Lepinay, 2007). The appearance on the markets of products whose definition (see Lepinay, 2007; Huault and Rainelli, 2009 for example) and valuation generate ambiguities opens up a range of opportunities for investors, and the possible extension of the network of connections between the agents who handle these complex products (banks, enterprises, energy suppliers, fund managers, small shareholders, etc.).

Thus we can draw a parallel between the role of the project in the reticular markets, described by Boltanski and Chiapello (1999/2005), and the role played by innovation in contemporary

financial markets. The creation of new products is a temporary source of profitability and not just a given of current financial capitalism. It generates an order, a kind of city regulated by a value system whose principle of equivalence is the capacity to generate complex financial innovations that pit different response mechanisms against a collection of ambiguities, especially where the valuation of products is concerned.

Beunza and Stark (2005) illuminate the nature of this value system by describing the organisation of trading rooms, the places where financial institutions make their connections and where they exchange their products. They point out that these rooms are a heterarchy (Girard and Stark, 2002; Stark, 2009). The relationships between the different members and desks are horizontal, not vertical, and nurture knowledge-sharing, as decentralisation is the guiding principle. With a flattened organisational hierarchy, no separate offices for hierarchical heads, open space design and a collegiate atmosphere, the trading rooms where financial products are exchanged these days have a collaborative structure that favours the exchange of information and agents' autonomy. For Beunza and Stark (2005) this kind of organisation promotes an entrepreneurial culture that favours innovation. Trading rooms organise the coexistence and adjustment of calculations that result from different measurement systems. Traders therefore appear like entrepreneurs, as Knight (1921) saw it, agents with the capacity to work with coexisting but different evaluation principles. They benefit from the ambiguities that arise from this coexistence (Stark, 2000). The trading room is organised to promote reflexivity, the ability to define and to recombine resources and combinatory innovation (Kogut and Zander, 1992) – in short, to produce new instruments containing ambiguities that guarantee the renewal of competitive appraisals of value and the recurrent appearance of still-undefined opportunities for arbitrage.

Today, since the dematerialisation of stock exchanges, the immense majority of financial stocks and products are exchanged through the trading rooms of international financial

institutions. However, the heterarchical organisation, as described by Beunza and Stark, is clearly linked to the higher common principle specific to OTC markets, that is, the infinite extensions of networks through rather ambiguous financial innovations.ⁱⁱ Connexionist traders have adapted to this form of market. Their stature is defined by the value system generated on these markets, which gauges their capacity to generate or favour invention, or by the use of complex products that allow the setting up of innovative investment strategies. Their “profile” shows the characteristic traits which Boltanski and Chiapello attribute to the connexionist being, the “worthy person” in the projective city. Connexionist traders enjoy a certain autonomy in relation to the institutions that employ them and do not hesitate to play on the competition between potential employers when negotiating a bonus (Godechot, 2007). They are willing to change, relocate and move easily between the financial centres where the world’s market activities are concentrated (Sassen, 2001). They are never short of a project and will readily leave the trading room to set up an entrepreneurial structure or an investment fund, because they are motivated by a logic that MacKenzie (2008) describes: “So they’re going into it [hedge funds] because they want to run something because they’re never, ever going to be the guy that sits right at the top [of an investment bank] because they can’t be bothered with the politics [i.e. organisational conflicts and jostling for promotion].” Traders are often impatient towards the “unworthy persons” who work in the middle and back office, who are not mobile and much less likely to live in an atmosphere of ambivalence, in the ambiguity of definitions or actions or explanations, given that they work in more normalised cognitive frameworks (accounting, deontology, internal controls). However, traders also know how to maintain relationships so that the back office benefits from the results obtained in the trading room (Godechot, 2007).

1.2.2 The structure of OTC financial markets: connections and networks

If we understand that, in the network world of OTC markets, financial innovations create zones of temporary accumulation of income and also enhancement of reputation for the institution where they were first developed, then we can grasp the structure of these markets at different levels. The organisation of the trading room is a first level, the most micro-economic. A wider approach to the organisation set up by the great financial institutions allows the identification of a second circle. In OTC markets, exchanges between trading rooms take place via complex electronic systems, linking rooms that are geographically far apart, in (usually multinational) companies. But the relation between these trading rooms and other activities in credit houses or other financial institutions shows some remarkable traits (Knorr Cetina and Bruegger, 2002). Trading rooms are carefully separated from the rest of the company's activities, not only physically (it is not unusual for access to be restricted) but also in the way they are governed. This suggests the organisation of exchanges that can be described, in Williamson-like terms, as hybrid, sitting at the frontier between organisations and the market. The fact that this organisation combines the characteristics of two forms of organisation – the salary model and to the entrepreneur model (Knorr Cetina and Bruegger, 2002) – is particularly apparent in the way traders are remunerated, which favours the exploitation of connexionist qualities in the people who work on the markets.

The extension of networks, the highest common principle in the polity we describe here, takes on shapes observed elsewhere, for example, interrelations that are very strongly underpinned by computing infrastructures – so much so that we can say that the market exists *because of* the intensity of communications between traders. Knorr Cetina and Bruegger, who studied the OTC Forex market, propose a definition of the market as a conversation on a global scale between the main financial centres of the world. This type of network, as Beunza and Stark (2005) noted, is similar to those described by Castells (2000). Thanks to new technologies,

they allow highly formatted social interactions with no physical contact; and to exist they need to develop more spontaneous, human complementary interactions. This phenomenon explains the need to bring the trading rooms of big multinational banks together in geographical financial centres (London, New York, Tokyo), hubs where traders can enjoy a kind of sociability of the sort described by Sassen (2001), (see also Thrift, 1997; Strange 1986; Leishon and Thrift 1997).

Finally, at a third level that corresponds to a third perspective of OTC markets, there are numerous interconnections between nominally competitive financial institutions. The logic of innovation that permeates OTC markets leads to the flourishing of new products marked, as we have noted, by a certain number of ambiguities. These ambiguities may be sources of profit but they also put the brakes on market development, causing a creative tension that obliges agents to cooperate even while competing against each other. The extension of the network of agents participating in the new market created around a financial innovation requires setting up joint actions by the principal promoters of these innovations, as has been clearly shown in the case of the credit derivatives market (Huault and Rainelli, 2009). Here the ISDA (Huault and Rainelli, 2009, Morgan, 2008), an association of investment banks and other OTC market agents, has taken in hand the question of contract definitions, legal qualifications, revision of standards, over a lengthy time span. Certain leaders, such as JP Morgan, involved in collaborative actions to promote market liquidity. In the construction around innovationsⁱⁱⁱ phase of the market, and in the consolidation phase (which is still incomplete twelve years after the first contracts in the credit derivatives market), cooperation between competing agents seems to be one of the ingredients of the development and functioning of markets.

In their attempt to show the emergence of a new community – the projective city at the heart of contemporary capitalism – Boltanski and Chiapello supply descriptors that apply most convincingly to OTC financial markets. But beyond highlighting these descriptors and their usefulness in characterising the difference between OTC markets and organised financial markets (see table 1), the main thing we learn from Boltanski and Chiapello is the revelation of the value system that dominates these markets. At the heart of the value system is a particular form of project, financial innovation, which, because it is a source of wealth creation, organises the relationship between people and objects. The hierarchy that is set up between “worthy” and “unworthy” is determined by their capacity to generate, utilise and recombine financial innovations. This has given the markets a functioning principle that has rarely been seen until now.

In the rest of this paper, we want to examine the updating of deep roots of action to identify the questions about the functioning of these markets that will undoubtedly be asked.

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2. New and fair devices to handle new situations

The value system on which connexionism rests is articulated around the notions of project, network and permanent change and has undoubtedly facilitated exponential growth of OTC markets and constant innovation. But behind this success lie major dysfunctions, some of which were laid bare at the time of the financial crisis. These dysfunctions constitute as great a threat for the financial markets themselves as for wider society.

More precisely, the race to innovate in derivatives has provoked strong criticism (Arnoldi, 2004; LiPuma and Lee, 2004, 2005; Maurer, 2002; Pryke, 2007; Pryke & Allen, 2000; Tickell, 2008), because derivatives radically transform capitalism and increase unlimited competition everywhere (Bryan and Rafferty, 2006), leading to a *commodified nightmare* (Fourcade and Healy, 2007). Bryan and Rafferty (2006) in particular see the continual invention of derivative products as an unprecedented way of linking markets, making it possible to compare and contrast formerly disparate and heterogeneous securities. With investors, managers and banks having the means to instantly compare the performances of different types of securities, the race to make profitable investments intensifies. This situation is seen by critics as bringing about a disconnection between financial and industrial capitalism. The neo-capitalism thus created is by nature essentially financial and speculative, free-floating in relation to the real economy. It takes advantage of the mobility of capital and disregard long-term investment, preferring immediate maximum profit through ever more sophisticated financial innovations. It has the know-how to profit from the worldwide networking of the financial world by placing resources in competitive situations, and to impose itself as a hyper-power to the detriment of industries and states. Thanks to financial innovation and globalisation, the domination of the financial world has been established over the industrial world. Others also detect, in the race for financial innovation, the origins of the deep instability of the international financial system. The highly mobile and immediately negotiable character of sophisticated derivative products, which are likely to be sold on as soon as they have been launched, favours opportunism and, in a purely speculative logic, creates major financial crises. For example, through the financial innovation of credit derivatives, banks transferred risks towards investors who, on the whole, trusted the optimistic opinions of credit rating agencies. When the issued securities proved to be toxic an extraordinary collapse in confidence followed, resulting in a brutal drying up of the market

and general collapse. The almost total disappearance of entire segments of the credit derivatives market, like collateralised debt obligations (CDOs), undoubtedly because of their OTC structure, threatened the survival of markets characterised by opaque transactions centred on very ambiguous products (Huault and Rainelli, 2009). The connexionist logic gives rise to a form of specific dysfunction, where opportunism founded on the ability to take advantage of information asymmetries can destabilize markets and even threaten their existence.

Because of the recurrence, violence and spillovers of recent financial crises, we currently witness the eruption of preoccupations from the *Civic World* where the “higher principle” relates to the notion of the common good, general interest and responsibility. Strikingly, the resort to the state – the public agent – when these institutions collapse seems unavoidable. During the financial crisis we saw big banks saved by different governments. The rhetorics of market activity promoters insisting on self regulation did not work any more and revealed a problem of legitimacy. As Boltanski (2009:29) notes, the order referred to in the discourse of agents on OTC markets suddenly did not seem to “conform *in fact* to the values which have been adopted *in principle*” (Boltanski, 2009: 29). Therefore, one question arises: What values can be promoted and what practices deployed to bring out a sense of justice in the financial system? One of the ways in which this could be done would be by building the *projective city* that is to say, by formulating principles of fairness adjusted to the logic of the real functioning of the financial world (2.1). Another way would be to resolve *discord* with the civic world more directly (2.2).

2.1. Forms of justice in the connexionist world: building the projective city?

Boltanski and Chiapello (1999/2005) ask whether there are ethical foundations to the connexionist logic and what their principles of justice would be? It seems that the “ontology of the network has been largely established in such a way to liberate human beings from the constraints of justification (...) The network is presented as a plane of immanence – to use Gilles Deleuze’s expression- (...). This dispenses with the loops of reflexivity that take the form of moral judgement” (Boltanski et Chiapello, 1999/2005: 106-107) It is therefore tricky to identify reference to justice specific to the connexionist logic, which is characterised by constant de-spatialisation, where very mobile individuals are disinclined to be accountable. As the network is open, it modifies itself and it is difficult to determine who participants are. “Fairness” in the distribution of status, according to people’s contribution presupposes closing the list of the relevant parties, at any given moment. In a completely networked world, no such closure is possible. The network is continually extended and altered, with the result that there exists no opposite principles for finalizing at a given point in time, the list of those between whom scales of justice may be established”. (Boltanski and Chiapello, 1999/2005: 106)

For example, there is no equivalent here to the solutions for opportunism formulated by Abolafia (1996) on the *futures* market. Any recourse to domestic logic – relying on group culture, trust, the strength of community norms, the fear of reprisals – is inoperable because the network remains open and individuals are on the move. Traders perfectly incarnate this logic. They are flexible, mobile and likely to defect if they are dissatisfied, threatening to accept golden handshake packages and move to competing institutions, taking their skills, market shares or client portfolios with them, in other words a number of resources that together are vaster than the resources linked to their own personal productivity (Godechot, 2006).

We might therefore suggest that the connexionist logic is specific in that it is founded on open networks, marked by geographical distances between agents for whom interpersonal links are replaced by hypermobility and fluidity (Knorr Cetina and Bruegger, 2002), all of which act as facilitators of opportunism. While small savers see their money immobilised and exposed to all the ups and downs of the world economy, thanks to financial innovations, big investors, obsessed by the liquidity of markets, have at their disposal stocks that are mobile and negotiable at any moment on international markets. “Don’t get stuck” has come to mean stay flexible, keep your options open, the mottos of market promoters who see financial innovations as a way of mobilising the immobilised (Lordon, 2008: 75) to the detriment of the final investment. As Bauman pointed out (2005), those who benefit from the system need freedom of movement, non-commitment and liquidity, unlike those whose feet are firmly on the ground.

In the final analysis, the specific traits of connexionist opportunism, which happens in a very despatialised universe, authorise liberation from the tests of the domestic world. The networked world belongs to an ephemeral aggregate of experiences and interests more than to a charter of rights and obligations (Castells, 2000: 264). Any attempt to fix a position in the network according to a cultural code would condemn the network to obsolescence: it would become too rigid and disappear.

The other difficulty in identifying principles of justice specific to connexionism arises from permanent displacements in capitalism, dismantling the critique that struggles to make sense of all these transformations (Boltanski and Chiapello, 1999/2005). The creation of permanently innovative derivative products makes accounting frameworks and control procedures, ineffective even before they can be used (Boltanski and Chiapello, 1999/2005: 509). This extreme mobility destabilises the critique that is already prey to great inertia, deeply disoriented and disarmed when it comes to stabilising forms of justice. From this point

of view, the distribution of jobs between front and back office in big investment banks reveals the power that these mobile and flexible individuals have over those who are immobile. It shows the difficulty of establishing formal control structures in OTC markets where there are still many remaining uncertainties over the definition, valorisation and standardisation of products. Thus, the social capital that employees in the front office enjoy, and the prestige of their position, give them the status of “big” players in the connexionist world, allowing them to impose their own logic and game rules. Conversely, back office employees give support and back up work in an environment where routine and ordinary tasks are the order of the day, rather than innovation and the making of extraordinary profits. Traders have the capacity to strike up relationships, enter networks, engage in winning transactions and play on the ambivalence of accounting, risk taking and moral frameworks. The counterpart to this is the immobility of back office employees, who are not paid a great deal and who get little respect for their tasks of control, registration and compensation (Godechot, 2006). Normalisation and control are stabilised, institutional and codified and as such are characterised by a great inertia and by deep immobility, which immediately disqualifies them when they are faced with the permanent flexibility of the activities they are supposed to regulate. Thus, the moral constraints and internal rules intended to limit the movements of members in the front office have little effect on traders who play on the ambiguities of products and markets. Traders are miles ahead of their immobile colleagues who remain in fear of being disconnected, are out of the game and have been abandoned by their more mobile colleagues (Boltanski and Chiapello, 1999/2005). All in all, the mechanisms for controlling opportunism are fatally weakened because of their status as “small” players in the connexionist world. Their immobility is a prime factor in the creation of profit that the traders make from their mobility (Boltanski and Chiapello, 1999/2005).

However, to counteract loss of trust, which might threaten the very existence of the network, some degree of long-term commitment and reciprocal control is required. This might provide foundations for the building of a “projective city” in the sense of Boltanski and Chiapello (1999/2005). The project constrains the network to submit itself to a form of justice (Boltanski and Chiapello, 1999/2005: 107) in at least one direction: the redistribution of connections and sharing of information, which will allow network extension and thus benefit everybody.

Concrete devices are needed to make this principle enforceable. One of these is a mechanism of identification and “traceability” of people and products. In the case of financial markets, this supposes the existence or setting-up of supranational bodies. The extra-territorial space towards which the capital markets have tended puts them out of the reach of the nation-states, which up to now were the only ones capable of supervising them (Bauman, 2005: 190). The reform of OTC markets demands the presence of powerful public agents on a worldwide scale and a true supranational coordination to build a new form of legal structure. Some authors see the drawing up an official status in law as a way of restraining the different forms of exploitation carried out by networks (Boltanski and Chiapello, 1999/2005: 383). The creation of new laws for hybrid forms, like the great interbank networks, could generate special norms for protection specific to the network, with the setting up of supranational balancing powers that would have legal means of control. This proposition could take the form of state-run independent centres, of a “superintendent” or institutions for arbitration whose mandate is to preserve the common good (Boltanski and Chiapello, 1999/2005: 304/384). The network would need to be included in the world of the law, “to define the role and responsibilities of the constituent units, to establish the rules by which they conduct their transactions and to resolve their disputes” (Boltanski and Chiapello, 1999/2005:384).

And yet, if we look closely at current developments in the international financial system it does not seem that agents are resolutely committed to this path of action. Neither does it seem that states have succeeded in convincing them of the need for such arrangements, nor that financial operators are aware of the danger of the general collapse of financial markets. It seems there is little chance that the connexionist world will self-regulate spontaneously, a position that will lead unavoidably to a much more confrontational way of handling the discord with the civic world.

2.2 Solving the dispute between connexionist and civic worlds

The theoretical logic of Boltanski and Thévenot would suggest that some forms of agreement are needed to reduce the tensions between the increase in criticism and the dispute with the civic world. The difficulty of working out solutions within the connexionist world leads to a different solution which could take the form of a compromise with the civic world. An alternative that might be acceptable to everyone, could then be to turn to the market world. The idea is to combat the imperfections inherent in OTC markets by bringing in more standardisation.

The *higher principles of the market world* – competition and transparency – are weapons with which to tackle the dysfunctions related to connexionism. For example, the proposal to set up clearing houses reflects the desire to combat the opacity and bilateralism of CDS contracts. According to Morgan (2010: 16), the main parties in favour “argued that the OTC markets had become highly complex and that was needed was a mechanism whereby trades between parties could be netted out so that the real exposure (and therefore the real risks being held) would be visible.” The challenge could be to encourage standardised markets by establishing clearing houses that would be effectively regulated and supervised.

The efforts made by various governments to save the world's financial system seemed at first to subscribe to this way of thinking: their main aim was to fight the crisis in market liquidity, in particular that of the credit derivatives market and the sub-primes. The notion of liquidity is a reflection of the idea that we have of the perfect market where asymmetries of information and opportunism are absent. Carruthers and Stinchcombe (1999: 353) base their analysis on the definition of economists: "By liquidity of a market, economists mean that standardized products can be bought and sold continuously at a price that everyone in the market can know, and that products are not normally sold at a price that diverges substantially from the market price. The idea is that everyone can know at all times what the price is, and only one price obtains in the market. Liquidity, like efficiency, is considered one of the great virtues of perfectly competitive markets." Liquidity is the sign of an efficient market, peopled with numerous investors and buyers who are in a position to exchange their stocks at transparent prices. In financial theory they describe market offers as the ability to sell stocks easily, with no institutional intervention, in a *laissez-faire* context. "Liquid markets being good, unliquid markets are bad" (Langley, 2009: 12), we need to get back to more transparency.

However, to work in this way, financial markets need different types of specific guarantee (Graham and Richardson, 1997; Picciotto and Mayne, 1999; Sassen, 2005: 31) and an enormous amount of work from governments. Carruthers and Stinchcombe (1999) point out their reliance on the reduction of transaction costs and the standardisation of securities to enable liquidity. In this logic, which is far removed from *laissez-faire*, as Foucault notes (2004: 124), state action encourages competition.

But what becomes of this quest for transparency and competition if we accept that the very particular nature of OTC financial markets, driven by permanent innovation, makes it difficult if not impossible for them to function according to Walrasian criteria? If we accept

our hypothesis that OTC markets are not a transitory form of modern financial markets, they do not seem destined to join the ranks of the most transparent and competitive. They seem to belong to a different species of organised markets, a different logic, a different value system and to respond to specific problems. The recourse to the principles of the market world presupposes a transformation of OTC markets so radical that it is highly unlikely it would ever happen. Some financial operators within ISDA are frightened by current attempts at reform because it is not certain that their ultimate interests (in terms of profitability) lie in greater transparency, increased standardisation and a total removal of ambiguity. The chief lobbyist of the ISDA judges that “excessive standardisation might encourage speculation, it doesn’t really contribute anything, while custom made products answer the needs of enterprises and investors.”

The limits of the power of the market world to help remedy the dysfunctions of the connexionist logic has been well identified by Boltanski and Chiapello (1999/2005). “Connexionist opportunism cannot, for one thing, be checked by the commercial city (...). Part of the interest of connections stems in fact from the inspection of resources that were not regarded as commodifiable or amenable to contracts (...). It is this incompleteness that explains the relative inoperability of the constraints that the commercial order rests on ” (1999/2005: 378).

Faced with this difficulty, there is still the possibility of a *more radical restructuring of the financial system, based on coercion and sanctions*. As Bauman (2005: 195) stated, “the journeying of economic initiatives to every corner of the planet would not be extravagant nor would they be guided only by temporary profit with no heed paid to collateral victims.” Partitioning off financial markets might hold back the destructive effects of generalised connexionism (Orléan, 2008: 40): the disconnection that follows might prevent savings banks from intervening on financial markets and taking risks with the money of small savers.

Partitioning and legal barriers effectively raise the costs of doing deals, and create additional expense for those managing to overcome these obstacles.

There are some who recommend a much more drastic limit to the risks taken by banks, forbidding the most toxic of financial innovations such as derivative products, “because these markets and these products are based on the principle of an incredible accumulation of counterpart risks” (Lordon, 2008: 179).

Finally, financial innovations, which are the motor of modern finance, lead to the formation of ultra-technical markets where only the inventors really understand the rules of the game. Getting beyond this stage of extreme technicality would be a means of containing the “domination regime” based on the increasing value of change (Boltanski, 2009: 203) and the exploitation of innovations.

One aspect to be addressed urgently would be how to put a brake on “the uncontrollable dynamic of financial innovation which multiplies products of an incredible complexity and where it is impossible to measure the risk” (Lordon, 2008: 171), so that the fight against hyper-instrumentalisation denounced by Thrift (2006: 298) can preserve the common good and the affirmation of the civic world.

Conclusion

In our analysis we have tried to lift the veil on the singular nature of modern financial markets. The opposition between the projective city and other communities, shown by Boltanski and Chiapello (1999/2005), reinforces our thesis that OTC markets respond to a connexionist logic and a value system favouring the extension of networks and innovation. The projective city values collective creativity where there is collaboration, encouraged by the number and quality of the links made with others. Financial innovation has no recognised creator. It is the product of teams and its vocation is to be widespread and to be enhanced. It

would be unwelcome for an individual to claim authorship or to seek to obtain ownership rights. Unlike the industrial community and its rational bureaucracy, the projective city assumes flexible working methods, adaptation to changing needs, and the self-organisation of agents. This is reflected in trading rooms that are organised very differently from other centres of activity in the banks to which they belong. Even more specifically, connexionist logic and project-based community characterise a system that is opposed to the market world in at least three ways. While commercial exchanges are sporadic, economic exchanges in the connexionist world are relative long-term nature. Secondly, while the efficiency of markets in the market world requires transparency, so that competition can be played out freely, networks are only known, only to those close to them. Organised markets quote prices in a continuous fashion; on OTC markets, nobody except the parties concerned knows either the global worth or cost of transactions. The final contrast between the market world and the projective city is the qualification of traded products. The product exchanged is detached from the market world and does not travel well outside the projective city. It is transformed by the relationship between buyers and sellers that characterises the financial products of OTC markets. Products are “tailor made” to meet their buyers’ needs, unlike financial products on organised markets.

The analysis in connexionist terms has also allowed us to think again about the challenges posed by the financial system and to identify dysfunctions whose underlying mechanisms were difficult to perceive. If the forms of the OTC market have created numerous innovations, they have created an equal number of problems. We have shown that the permanent innovation that drives the financial worlds has allowed dominant agents, who have the capacity to invent, to create profitable instruments and to capture a large part of their power and value. Their opportunism is difficult to contain in the open, globalised networks where the usual regulations (Abolafia, 1996) and normalisation are considerably weakened.

The structural dualism we have highlighted between those who draw up the norms – the immobile or “small” players, unworthy persons in the connexionist world – and those who play on the ambiguity, move around and get around the rules, condemn control devices to uselessness. To this difficulty must be added the absence of product traceability and increasing sophistication, which makes the chain of responsibility more and more diffuse in opaque networks that are only knowable from one person to another.

Faced with these challenges we have tried to “adjust” the critique. If it is centred around the idea of the extreme mobility of capitals via these modern financial instruments, with consequences that can be immense for individuals and for states (Bryan and Rafferty, 2006), it cannot account, with precision, for the particular nature of OTC markets and the operating profits at work. By exposing the dysfunctions created by the connexionist logic we have been able to suggest some paths for thought and action to tackle these problems. Should we build a “projective city” by rethinking, for example, international regulation and building new laws? Current developments lead us to doubt an awakening of conscience among the actors in the connexionist world and their capacity to self-regulate spontaneously. A return to the “market world” cannot be entertained either, except at the cost of raising a radical contradiction to the intrinsic dynamics of modern financial markets.

So we are left with the coercive solution, which is to say resolving disputes in the heart of the civic world by encouraging the partitioning of financial markets, banning certain products and promoting de-sophistication (Lordon, 2008). The race for innovation and the growing complexity of modern financial products block out reality and stifle the emergence of a public debate. The increasing technicality of derivative products pushes the financially uninitiated further and further from any democratic decision making. As Boltanski said (2009: 200) “the often technical character of statements and the measures taken makes it difficult or even useless to transmit them to the public at large.” This exaggerated complexity and hyper-

sophistication, intended to create pockets of profit, disarms critics in that it relates to an unquestionable and necessary technical reality. However, the structures of finance need not be the exclusive preserve of experts. Understanding them is a political process that would lead to thinking about “final results” and would engage all citizens. This involves rejecting the appropriation that expert knowledge implies and reassigning the presupposed places of financiers and others (Rancière, 1998). In this context Castells speaks of developing a society based on values rather than the technico-economic deployment that characterises the domination of a networked society. Re-politicising the world of finance (De Goede, 2004) would free the civic world from its subordination to experts and allow it to reaffirm itself.

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Table 1: Principal differences between the market and the connexionist world

	Market world	Connexionist world <i>OTC Markets</i>
<i>Time</i>	<ul style="list-style-type: none"> - Isolated transactions - Brief encounters between sellers and buyers 	<ul style="list-style-type: none"> - Long term transactions - Long term cooperation between sellers and buyers
<i>Transparency</i>	<ul style="list-style-type: none"> - Transparency as the ideal to pursue 	<ul style="list-style-type: none"> - Opacity surrounding the sums concerned and the price of transactions
<i>Agents</i>	<ul style="list-style-type: none"> - Anonymity - Atomicity - Great number of agents 	<ul style="list-style-type: none"> - Open network, only knowable, from one agent to the next - De-spatialisation
<i>Product</i>	<ul style="list-style-type: none"> - Objective definition - Homogeneity 	<ul style="list-style-type: none"> - Tailor made solutions

ⁱ Normally derivatives are accounted either by reference to notional totals or by reference to the volume of deals. The only complete data from the BIS being in notional totals, that is the measure used here. It does tend to exaggerate the size of markets. An approximate measure from the volume of trades would yield about 22% for standardized markets and 78% for OTC markets.

ⁱⁱ See also Sassen (2005): “the drive to produce innovations is one of the marking features of the financial era that begins in the 1980s (...) what is perhaps different today is the intensification.”

ⁱⁱⁱ Resorting to forms of collaboration between competing organisations to promote an emerging market is not restricted to OTC markets (MacKenzie and Millo, 2003). On the other hand, the need to perpetuate these collaborations over a lengthy period seems characteristic of markets where the absence of product

standardisation maintains ambiguities. Promoters of these products have to tackle these ambiguities from time to time during the market lifetime.